

September 9, 1998

This document was submitted to EPA by a registrant in connection with EPA's evaluation of this chemical and it is presented here exactly as submitted.

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Bayer **FAX COVER SHEET**

24/OPP#34134

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Date: August 29, 1996**No. of Pages (including this page):** 10**To:** Ron Kendall**From:** Melvin K. Tolliver**Company:** EPA**Department:** R & D, Registrations Section**Fax:** (703) 308-8773 or 308-7042 or 308-8005**Fax:** (816) 242-2738**Phone:** (816) 242-2150**Phone:** (703) 308-8068**SUBJECT:** Fenamiphos Occupational Exposure

Ron,

On August 14, I sent you a revised copy of the Agency's Table VII. Summary of Occupational Exposure Values and Margins of Exposure (MOE) for Fenamiphos at the request of Kathy Depukat. Since then, Laura Morris called me to discuss the changes we had made. I told her that if we got additional information which would be helpful to her I would send it to her through you. Therefore, please forward the following to Laura Morris:

1. Nemacur (Fenamiphos) Revised Acres Treated for Certain Crops, dated August 29, 1996, 1 page
2. August 26, 1996 Bayer internal memorandum entitled "Nemacur Task Force Meeting," 2 pages
3. August 17, 1996 memo from John L. Perry, "Nemacur Use History - Fresno County 1994 & 1995," 2 pages
4. August 14, 1996 memo from Ed Ishida, "Nemacur Use by Applicators" (includes August 14, 1996 Calvin Oda, Del Monte Fresh Produce memo), 4 pages

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August 29, 1996

NEMACUR (FENAMIPHOS)
REVISED ACRES TREATED FOR CERTAIN CROPS

Exposure Scenario	Formulation	Application Type	Application Timing	Application Targets	Maximum Rate (lb ai/acre)	Daily Max. Trtd. Acres
Groundboom	Nemacur 3	Broadcast	Pre-transplant	Tobacco	6	45
		Band	Post-transplant	Citrus	7.5	25
				Apple	7.5	30
				Grape	6	67
				Peach Nectarine	7.5	15
				Banana	5	5
				Broccoli Cauliflower	3	30
		Broadcast	Post-transplant	Pineapple	9	100
Granular Application	Nemacur 15G	Band	At-plant or -transplant	Cabbage	3	15

Internal Memorandum

Date: August 26, 1996

Subject: NEMACUR TASK FORCE MEETING

From: D. HENRICHS

To: C. WILSON

I. PROFILE OF THE TOBACCO GROWER BASED ON:

(A) Average farm size/grower.

The average tobacco grower has 40-100 acres of tobacco. District average is 62 acres. It is important to note that Nemacur is now sold almost entirely to the smaller producers. Most larger growers have shifted to fumigation and use Nemacur only as a fill-in when transplants are ready too early in the spring.

(B) Identify whether Nemacur treatments are made by grower or custom applicator.

In the great majority of cases, application of Nemacur is made by the grower and not by a custom applicator. Overall, approximately 80-100% of the Nemacur is applied by the grower. District average is 93% grower applied.

(C) What role does the person doing the application play in the mixing and loading procedures?

Generally, the mixer/loader/applicator are one and the same. Only in 5% or so of the cases is the person who mixes the chemical different from the person who applies it.

(D) Quantify the number of acres an applicator would apply per day.

Between 5 and 45 acres would be applied and incorporated in one day. Because of the relatively small number of tobacco acres per grower, a given farmer could mix, load and apply Nemacur for only one day per year. District average would be 26 acres.

(E) Identify average use rate/application.

District average is 1.1 gls per acre.

II. PROVIDE DETAILS ON THE GROWER APPLICATION OF NEMACUR

(A) Application Methods

The most common application is a broadcast spray on land that is then incorporated and bedded immediately (usually within 3 hours). The only two implements used for incorporation are a disk and a field cultivator. A disk is probably used in 65% of the cases.

Note: Incorporation is rarely done in two different directions "as it should be done". If it is double incorporated the grower normally just moves over left or right from the first pass and incorporates again. This practice probably leads to streaking or incorporating the product too deep. There are a few larger growers that have equipment to band and incorporate Nematicur on prepared beds. Bed applications are accomplished by spraying Nematicur on the beds immediately in front of the rotary hoe that "freshens" and reshapes the beds, thus incorporating the Nematicur into the soil.

(B) Standard type of equipment used.

A pull type sprayer attached to a tractor or saddle tanks with a tractor mounted boom is used to spray the Nematicur. Then a disk or field cultivator is used to incorporate in a separate operation. The bedding is then done in a third pass over the field. The beds are allowed to set for several days before they are re-bedded, (freshened). The planting operation follows.

(C) If spray equipment is attached to tillage implement, describe where spray attachment appears on equipment.

When application of Nematicur is made in one pass by one tractor, chemical spray nozzles are permanently mounted on the front of the disk or field cultivator so that the chemical is applied then immediately incorporated. When a second tractor is used for incorporation, chemical application is made through a boom mounted on the hitch at the back of the tractor.

(D) Describe planting activities after chemical applications have been made.

After Nematicur application and incorporation, the grower waits from 2 to 7 days before transplanting the tobacco into the field. This delay is necessary in order to give the wireworm material (usually Lorsban 4E) time to act on pests present in the field.

We use 100% mechanical transplanters which are pulled by a tractor through the field. The people doing the transplanting actually ride through the field. There is usually one person who walks behind the transplanter to patch misses.

If hand fed transplanters are used, the workers sit on the implement and hand feed plants onto the paddle which sets the plant in the soil. For a carousel type planter the workers fill the hopper as needed from the greenhouse tray.

To: KEN NOEGEL
CC: JERRY PHILIPP
From: John L. Perry, Jr.
Date: August 17, 1996
Re: NEMACUR USE HISTORY - FRESNO COUNTY 1994 & 1995

memo

ATTACHED IS THE INFORMATION WE DISCUSSED ABOUT NEMACUR ACREAGES TREATED. QUITE INTERESTING

1. THE PERCENTAGE OF TOTAL ACRES THAT ARE ACTUALLY TREATED ARE RELATIVE LOW IN THE GRAPES AND VERY LOW IN THE TREE CROPS.
2. THE AVERAGE ACRES PER APPLICATION TRACKS WITH THE AVERAGE BLOCK SIZE (ACRES) IN EACH CROP RESPECTIVELY. (PEACH & NECTARINE BLOCKS ARE 5 TO 10 ACRES ON AVERAGE, RAISIN GRAPES AT 40 ACRES, TABLE GRAPES AT 20 ACRES AND WINE GRAPES AT 60 ACRES ON AVERAGE.

I HOPE THIS INFORMATION IS USEFUL TO YOU.

BEST REGARDS, JOHN P

from the desk of...

John L. Perry, Jr.
Sales Specialist
Bayer Corporation
P.O. Box 603
Kingsburg, CA 93631

209/897-3774
Fax: 209/897-8974

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FRESNO COUNTY - NEMACUR USE HISTORY, 1994 & 1995 CROP YEARS

CROP	YEAR	TOTAL ACRES	% OF TOTAL TREATED	AMOUNT REPORTED (GALLONS)	ACRES TREATED	TOTAL APPLICATIONS	AVE. ACRES PER APPLICATION
APPLES	1995	3,506	6 %	168	210	7	30
	1994	3,206	9 %	179	300	11	27.27
GRAPES, RAISIN	1995	167,792	13 %	9,453	21,608	582	37.13
	1994	168,671	16 %	10,935	26,260	675	38.9
GRAPES, TABLE	1995	10,580	18 %	1,335	1,883	85	22.15
	1994	10,142	24 %	1,783	2,428	120	20.23
GRAPES, WINE	1995	33,659	11 %	1,581	3,659	55	66.53
	1994	34,575	12 %	2,115	4,305	86	50.06
NECT- ARINES	1995	16,230	2.8 %	406	450	40	11.25
	1994	13,051	5.3 %	473	685	50	13.7
ORANGES	1995	24,807	1.2 %	155	304	23	13.22
	1994	22,757	2.2 %	308	505	27	18.70
PEACHES	1995	15,260	7 %	663	1,120	76	14.74
	1994	14,373	2 %	213	278	43	6.47

BAYER - Agriculture Division

Date: August 14, 1996
To: Ken Noegel -R&D
From: Ed Ishida - Bayer Corp
Subject: Nematicur Use by Applicators

Distribution:
J. Philipp
M. Learned

Ken,

Following are estimates for citrus, grapes, and bananas. Calvin Oda responded to the pineapple request with the attached fax.

I. Pineapple

- A. See attached by Calvin Oda - Del Monte Fresh Produce/DMFP

II. Citrus

A. Ground Equipment/Band Application

1. Average acres per job: 5 to 25 acres
2. Jobs done per day by one driver: 1 to 2
3. Average rate per acre: 3 gallons/acre
4. Average acres per day applied by one driver: 15
 - i. Average hours of application per day: 8 hours
 - ii. Applications are not on a daily/frequent basis
 - iii. Applications use a closed system with full protective equipment
 - iv. Normally complete by one driver who mixes and applies

B. Chemigation

1. Average acres per job: 5 to 30 acres
2. Jobs done per day by one man: 1 to 2
3. Average rate per acre: 1.5 gallons/acre
4. Average acres per day applied by one man: 20
 - i. Average hours of application per day: 3 hours
 - ii. Applications are not on a daily/frequent basis
 - iii. Applications use a closed system with full protective equipment
 - iv. Normally complete by one man who mixes and injects

BAYER - Agriculture Division

III. Grapes

A. Chemigation

1. Average acres per job: 5 to 40 acres
2. Jobs done per day by one man: 1 to 4
3. Average rate per acre: .33-.5 gallons/acre
4. Average acres per day applied by one man: 20 - 100
 - i. Average hours of application per day: 2-8 hours
 - ii. Applications are not on a daily/frequent basis
 - iii. Applications use a closed system with full protective equipment
 - iv. Normally completed by one man who mixes and transfers into injection tank.

B. Ground/Band: Rare method of application on the coast. More acres done in the SJValley

IV. Bananas

A. Chemigation

1. Average acres per job: 3 to 7.5 acres
2. Jobs done per day by one man: 1 to 2
3. Average rate per acre: 1 gallons/acre
4. Average acres per day applied by one man: 5 acres
 - i. Average hours of application per day: 4 hours
 - ii. Applications are not on a daily/frequent basis
 - iii. Applications made with full protective equipment

B. Band

1. Average acres per job: 2 to 5 acres
2. Jobs done per day by one man: 1 to 2
3. Average rate per acre: 1 gallons/acre
4. Average acres per day applied by one man: 5 acres
 - i. Average hours of application per day: 8 hours
 - ii. Applications are not on a daily/frequent basis
 - iii. Applications made with full protective equipment

If you have any questions, please call or fax. Thanks.



August 14, 1996

To: Mr. Ed Ishida
Bayer Corporation

From: Calvin Oda
Del Monte Fresh Produce (Hawaii) Inc.

Subject: Namacur 3 Use by an Applicator

As a follow up to your facsimile message to me dated August 13, 1996, on typical application procedures for Namacur (fenamiphos) in pineapple is the following information.

1. For foliar applications, an applicator operating a boom sprayer from an enclosed cab can apply fenamiphos to 50 to 100 acres in an 8 hour shift per operating day. The number of acres that can be treated in a shift is dependent on the field layout, distance from the water source, and number of supply (mixing) trucks assigned to the operation. Applications are made to different field areas 2 to 3 times per week in two weeks per month.

The application crew typically consists of a spray truck operator and one to two supply truck drivers. The spray truck operator makes the actual application while the supply truck drivers transport, handle, and mix the pesticide. In compliance with Worker Protection Standards, spray truck operators and supply truck drivers maintain radio contact with the baseyard on an hourly basis.

2. For applications made through the drip irrigation systems, an applicator can treat approximately 30 acres per shift per field. Generally two drip irrigation systems are operated at a given time giving an applicator the capability of treating a maximum of 60 acres per 8 hour shift. In drip fields, the drip system operator may be applying fenamiphos, two to four times per week for two weeks per month.

The application crew typically consists of two to three individuals that work as a team to open valves, check operating pressures, check the system, repair leaks prior to application, post warning signs, and make the actual application.

All workers that handle fenamiphos or other OPs are included in a voluntary colinesterase testing program. DMFP has a great track record

with the program and has established an action level that is even stricter than California law. All appropriate workers are tested on a quarterly basis. The program is independently administered by the Straub Clinic in Honolulu.

3. Yes. As previously stated, the application team for foliar and drip applications consists of two to three people who are in constant radio contact with the Baseyard.

4. For foliar applications, an open transfer system is being used. The handler must wear personal protective equipment consisting of chemical goggles, respirator, tyvek coveralls, rubber boots, rubber gloves, and chemical apron when transferring the material. Please provide DMFP with recommendations on types of closed systems that may be practical for our situation. In a typical supply truck load, we will mix approximately 8.5 gallons of Nemacur 3 with the water.

For drip applications, the transfer is made directly from the container into the system through venturi systems. In some cases dependent on the acreage, some measuring activities are necessary for drip applications.

If there are any questions, please call me at (808) 621-1205. Say hello to Ken for me. Best regards.



xc: R. Pang
D. Kohara